

(All dates in June unless otherwise specified)

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	State	Date
MISSISSIPPI DRAINAGE					
Mississippi:	<i>Feet</i>			<i>Feet</i>	
Keokuk, Iowa.....	14	18	18	14.0	18
Quincy, Ill.....	14	17	20	15.7	19
Hannibal, Mo.....	13	17	21	15.5	19
Louisiana, Mo.....	12	18	21	13.9	20
Wisconsin: Knowlton, Wis.....	12	15	16	15.5	15
Skunk: Augusta, Iowa.....	15	15	19	22.55	17
Des Moines:					
Tracy, Iowa.....	15	17	17	15.5	17
Ottumwa, Iowa.....	10	16	17	10.4	17
Smoky Hill: Lindsborg, Kans.....	21	7	7	23.6	7
Republican: Concordia, Kans.....	8	6	6	8.5	6
Osage: Osceola, Mo.....	20	16	17	20.6	16
Neosho:					
Oswego, Kans.....	17	12	12	18.4	12
Fort Gibson, Okla.....	22	17	17	22.0	17
				6.8	4
				5.0	8
				5.0	11
				5.0	18
Canadian: Logan, N. Mex.....	4			4.6	7
North Canadian: Woodward, Okla.....	4	6	7	30.3	May 29-30
Tallahatchie: Swan Lake, Miss.....	25	(1)	13	41.2	5-6
Red: Alexandria, La.....	36	(1)	13	40.6	6-7
Onachita: Monroe, La.....	40	2	11		
WEST GULF DRAINAGE					
Sabine: Logansport, La.....	25	(1)	11	34.1	May 28-29
Trinity:					
Long Lake, Tex.....	40	(1)	2	46.7	May 23
Riverside, Tex.....	40	(1)	2	45.8	May 29
Liberty, Tex.....	25	(1)	14	27.9	3-5
Guadalupe: Victoria, Tex.....	16	20	20	16.3	20
Rio Grande:					
San Marcial, N. Mex.....	3	2	4	3.1	2
Rio Grande, Tex.....	21	13	14	23.0	13
		(1)	2	23.6	2
San Benito, Tex.....	23	13	19	24.9	15
		2	3	18.3	3
Brownsville, Tex.....	18	14	16	18.4	14-15
PACIFIC DRAINAGE					
Colorado: Parker, Ariz.....	7	(1)	(2)	10.5	7, 17-20
Colorado, Roaring Fork: Carbondale, Colo.....	5	12	14	5.5	13
		(1)	1	9.3	May 31
Gunnison: Delta, Colo.....	9	13	13	9.0	13
Columbia: Marcus, Wash.....	24	12	18	24.4	14-15

1 Continued from last month.

2 Continued at end of month.

### EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, JUNE, 1930

By J. B. KINCER

*General summary.*—During the first decade temperatures, notably at night, were too cool for best growth of vegetation rather generally east of the Rocky Mountains, especially for warm-weather crops such as corn and cotton. Some interruption to farm work was reported, but seasonal operations made generally good advance. Showers and locally generous rains afforded temporary relief in the formerly dry Atlantic area, but rainfall continued deficient over a considerable part of the interior, including West Virginia, most of Ohio, much of Kentucky and Tennessee, the eastern third of Missouri, and the southern portions of Illinois and Indiana.

During the second decade droughty conditions continued in the eastern and lower Ohio Valley and many south-central parts of the country, while the western half was practically rainless. Heavy to excessive rains in the lower Missouri and upper Mississippi Valleys and in parts of the Southwest were detrimental to outside operations, but in local areas the additional moisture was of great benefit. High temperatures locally served to intensify the droughty conditions, especially in Kentucky, while high, drying winds were reported from many districts of the Northwest.

During the last decade showers were helpful in many places in the Ohio Valley, but most upper-valley districts

were still dry, with a good rain needed in many south-central sections of the country. Farm work made generally good advance, with very little interruption from rainfall; wheat harvest progressed northward to the central portions of Indiana, north-central Missouri, and in eastern Kansas nearly to the Nebraska border. Showers were beneficial rather generally over the northern parts of the country and in the middle Atlantic area, but further heavy rains in the Florida Peninsula were detrimental.

*Small grains.*—During the first decade the cutting of winter wheat with binders had begun north to northern Oklahoma and harvest had extended into the Texas Panhandle. Wheat was ripening in southeastern and southern Kansas, while progress was very good in Nebraska, with the crop heading well. Conditions were still unsatisfactory in the Ohio Valley, with progress and condition spotted, ranging from very poor to very good. The weather continued largely favorable in the Spring Wheat Belt, with the crop looking fine and well stooled and rooted. Oats and other small grains varied widely, especially oats in the Ohio Valley, where much short straw and thin stands were reported.

During the second decade conditions were, in the main, favorable for winter wheat harvest which was progressing as far north as central Illinois, southern Indiana, central Missouri, and southern Kansas. The crop was mostly poor to satisfactory in Ohio, where it was beginning to ripen, while dryness hastened maturity in Indiana. Much spring wheat was beaten down by heavy rains in Iowa, while some suffering from dryness was reported from northern and western South Dakota, but in general the crop did well. Cutting oats was well along in the South, but conditions were variable in many sections.

During the last decade winter wheat harvest progressed northward past the central parts of the Ohio Valley and to north-central Missouri and northern Kansas. Copious rains were very beneficial in Washington and parts of Oregon and good rains in South Dakota materially aided the spring wheat crop, which was heading. Slow growth was reported from some northern parts of the Spring Wheat Belt, but the crop was clean and of good color. Oats were heading very short in the southern Ohio Valley area, while harvest advanced almost as fast as winter wheat in the Southwest.

*Corn.*—During the first decade the weather was generally too cool for best growth of corn and advance was mostly only fair. Planting was practically completed but considerable replanted corn was not up and the cool weather retarded germination. Growth was good in the Southwest, but, in the Ohio Valley, a good warm rain was badly needed. Cultivation made fair progress, while in Iowa conditions had been favorable for weeds and the state of the crop varied considerably. During the second decade conditions favored cultivating and corn was mostly clean. In Iowa considerable was damaged by rain and hail; advance of the crop ranged from replanted second time to knee-high. Corn made generally good progress where rain was ample, but the crop deteriorated in central and southern Ohio due to the drought. It was satisfactory in parts of the western belt, but in the northwest the crop was somewhat late due to cool weather. In the middle Gulf States and adjacent sections rain was badly needed. During the last decade the reaction to warmer weather was favorable for growth of corn rather generally and the crop made good to excellent progress in most places, while conditions favored cultivation. It was still too dry, however, in parts of the Ohio Valley and eastern Missouri, and the

corn crop was late in the western belt. Advance was excellent in Iowa and the average condition was about normal; rains were helpful in the Atlantic States.

*Cotton.*—During the last decade temperatures were generally too low in the Southern States for good growth of cotton, but conditions were mostly favorable for cultivating and chopping. In Texas progress of the crop was poor to only fair due to cloudiness in the south and cool nights elsewhere, though cultivation made rapid advance and early plants were forming squares to the central portion. In Oklahoma planting was practically finished, but the crop was late and cultivation was poor. In central parts of the belt growth was slow, while in the Atlantic States showers were beneficial; squares were showing in early fields of South Carolina and in Georgia as far north as Augusta.

During the second decade temperatures were also too low for best development of cotton, while moisture was needed in much of the central area. General condition averaged only fair in Texas; there was some deterioration in the lower Rio Grande Valley due to frequent rains, but elsewhere advance was fairly good. In Oklahoma advance of early planted cotton was fairly good, but late-planted made only fair growth. Elsewhere west of the Mississippi River fair to fairly good progress was made. In central parts of the belt poor to only fair advance was indicated due to coolness and a general lack of sufficient

moisture. In more eastern portions poor to good progress was made, with cotton well fruited in southern Georgia and the first bloom reported in South Carolina two days ahead of normal.

During the last decade warmer weather was favorable and cultivation made good advance; rain was needed in central sections of the belt. In Texas some improvement was reported from most districts, but the crop was still late, though early-planted was fruiting well. Progress was generally very good in Oklahoma, while in Arkansas advance was very good to excellent. Rain was needed in a good many places in the central belt, especially for the late-planted, while in the Atlantic States there was too much rain in parts, but in general the weather was favorable, with progress mostly good.

*Miscellaneous crops.*—The accumulating deficiencies of precipitation in the Mississippi Valley and many east-central parts of the country was detrimental to pastures and at the close of the month many were reported in poor condition. Except locally dry areas, the great western grazing areas were satisfactory, with livestock doing well generally. Dry weather also unfavorably affected truck and garden crops. Sugar beets made good advance, but the drought unfavorably affected cane in Louisiana. Fruits did well, except for some locally heavy dropping.

## WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

### NORTH ATLANTIC OCEAN

By F. A. Young

The most unusual feature of the weather over the North Atlantic during the current month was the scarcity of cyclonic disturbances accompanied by winds of gale force. Among the large number of forms received from vessels up to time of writing, only eight rendered gale reports, with a maximum wind force as high as nine in only two cases. Gale were not reported on more than one day in any 5° square, and all but one occurred after the 16th.

As shown in Table 1, both departures and extremes of pressure were comparatively small at most of the stations, and slight gradients were the rule during the greater part of the month.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian). North Atlantic Ocean, June, 1930

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Belle Isle, Newfoundland.....	29.87	<sup>1</sup> +0.03	30.58	10th.....	29.48	16th.
Halifax, Nova Scotia.....	29.99	<sup>2</sup> +0.02	30.50	10th <sup>3</sup> .....	29.54	22d.
Nantucket.....	30.00	<sup>3</sup> 0.00	30.34	12th.....	29.54	22d.
Hatteras.....	30.04	<sup>2</sup> +0.02	30.40	3d.....	29.70	22d.
Key West.....	29.97	<sup>2</sup> -0.02	30.10	30th.....	29.82	14th.
New Orleans.....	30.00	<sup>3</sup> 0.00	30.16	3d.....	29.80	17th.
Cape Gracias, Nicaragua.....	29.88	<sup>1</sup> -0.04	29.92	6th <sup>3</sup> .....	29.82	12th. <sup>3</sup>
Turks Island.....	30.07	<sup>2</sup> +0.06	30.18	30th.....	29.98	13th.
Bermuda.....	30.15	<sup>2</sup> +0.02	30.38	3d <sup>3</sup> .....	29.92	21st. <sup>3</sup>
Horta, Azores.....	30.29	<sup>1</sup> +0.08	30.48	9th.....	30.14	15th. <sup>3</sup>
Lerwick, Shetland Islands.....	29.89	<sup>1</sup> +0.09	30.43	15th.....	29.38	10th.
Valencia, Ireland.....	29.97	<sup>1</sup> -0.03	30.36	7th.....	29.55	30th.
London.....	30.00	<sup>1</sup> +0.07	30.27	15th.....	29.69	27th.

<sup>1</sup> From normals shown on Hydrographic Office Pilot Charts, based on observations at Greenwich mean noon, or 7 a. m., seventy-fifth meridian time.

<sup>2</sup> From normals based on 8 a. m. observations.

<sup>3</sup> And on other date or dates.

Fog was unusually prevalent north of the fortieth parallel, west of the twentieth meridian, and also along the American coast between Hatteras and New York. The number of days in which it occurred in different sections of the ocean is as follows: Over the Grand Banks, from 20 to 23 days; along the American coast between the thirty-fifth and forty-fifth parallels, from 11 to 20 days; over the steamer lanes between the twenty-fifth and forty-fifth meridians, from 11 to 14 days; along the European coast from the thirty-fifth to fifty-fifth parallels, from 2 to 3 days.

Charts VIII to XI cover the period from the 23d to 26th, inclusive, and were drawn to show the conditions encountered by the airplane *Southern Cross* on her westward flight across the North Atlantic.

On the 1st St. Johns, Newfoundland, was near the center of a fairly well-developed Low, and the Dutch S. S. *Gaasterdijk* some 300 miles south of the center encountered a moderate gale, as shown in table. According to reports received, this was the only gale occurring before the 17th of the month.

On the 1st a vessel off the south coast of Florida, near Miami, reported an easterly wind, force 7, barometer 30.11 inches.

On the 2d westerly to northwesterly winds of force 7 prevailed over the steamer lanes, between the thirtieth and sixtieth meridians, and the area of low pressure remained over Newfoundland.

During the greater part of the month the North Atlantic HIGH was well developed, and from the 3d to 8th high pressure was also the rule over the ocean generally, resulting in stagnant wind circulation. From the 9th to 11th the Icelandic Low was comparatively active, and while the pressure gradient between the two centers of action was fairly steep during this period, few reports